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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/798,031      | 03/11/2004  | Takao Maeda          | 035576/275466       | 6003             |

826 7590 08/02/2006

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| EXAMINER |
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WILKINS III, HARRY D

|          |              |
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| ART UNIT | PAPER NUMBER |
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1742

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/798,031

Applicant(s)

MAEDA ET AL.

Examiner

Harry D. Wilkins, III

Art Unit

1742

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13, 14 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13, 14 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Status*

1. All previous grounds of rejection have been withdrawn since the prior art did not reasonably teach or suggest the feature that the melting point of the Mg source material was above 650°C.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 13, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagihara et al (JP 60-250557) in view of Tsukahara et al (JP 11-106847).

Yanagihara et al teach (see abstract) making a hydrogen storage alloy that has the general formula  $\text{LaNi}_x\text{Co}_y\text{M}_z$ . The overall composition has a formula that would make the crystal structure to be of the  $\text{CaCu}_5$  type. The alloy was formed by melting (see page 4 of translation provided in parent application). Among the disclosed metals for M, Yanagihara et al expressly disclose that Mg is suitable. The subscript for M, z, is between 0 and 1. Thus, Yanagihara et al disclose adding a small amount of Mg to the melt.

Since Yanagihara et al do not expressly teach an example containing between 0.1 and 1.0 wt% Mg, it is considered that Yanagihara et al do not anticipate claim 13. As such, the Examiner rejects claim 13, based on the fact that it would have been

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obvious to one of ordinary skill in the art to have optimized the amount of Mg present in the alloy in order to minimize the battery pressure at the final stage of charging which was the effect of the M element as taught by Yanagihara et al (see page 3 of translation).

Yanagihara et al do not teach using a Mg alloy of the Mg source material.

Tsukahara et al teach (see English abstract, paragraphs 56 and 58 and table 1) that when dissolving Mg into a melt, more Mg was effectively added to the alloy when a Mg-Ni source material was utilized.

Therefore, it would have been obvious to one of ordinary skill in the art to have utilized a Mg alloy ( $Mg_2Ni$ ) as the Mg source material in the process of Yanagihara et al as taught by Tsukahara et al because the Mg alloy provided more effective utilization of the added Mg.

Regarding claim 14, the melt further included Ni and Co. Yanagihara et al teach (see page 4 of translation) that all of the constituents were added to a furnace and melted together. Thus, Yanagihara et al fail to teach adding the Mg after the melt was formed. However, a change in the order of adding ingredients has been held to be obvious absent evidence of unexpected results. See MPEP 2144.04.IV.C.

Regarding claim 16, Tsukahara et al teach using a Mg-Ni alloy to add Mg the melt.

### ***Response to Arguments***


4. Applicant's arguments with respect to claims 13, 14 and 16 have been considered but are moot in view of the new ground(s) of rejection.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D. Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Harry D Wilkins, III  
Primary Examiner  
Art Unit 1742

hdw